

RECEIVED  
CENTRAL FAX CENTER

SEP 26 2007

## IN THE SPECIFICATION

Page 1, line 12, replace the paragraph beginning "Especially for RF applications" with the following:

Especially for RF applications, a switch circuit needs to fulfill certain requirements. One of the requirements would be a low insertion loss (IL) in the forward path. Another would be the isolation performance between not-selected signal sources and the signal input as well as between signal sources.

Page 1, line 23, replace the paragraph beginning "US-A-5,274,343 discloses" with the following:

U.S. Pat. No. 5,274,343 discloses a radio frequency circuit for a radar system, connecting several RF signal sources to a single input port of a frequency multiplier circuit. The circuit works as an RF switch circuit with cascading first and second switches, interconnected by a propagation network. First and second switches are SPDT (single pole double throw) integrated FET switches, each comprising one common port and two branch ports. In each of the first switches, one branch port is connected to a termination impedance and the other is connected via a propagation network to a branch port of one of the second switches. The common ports of the second switches are connected to an input port via a network.

Page 2, line 8, please delete in its entirety the paragraph beginning "This object is achieved."

Page 2, line 30, replace the paragraph beginning "According to the invention" with the following:

According to the invention, in the switch circuit each input terminal is connected to one of the branch ports of the second switch via one of the first switches. Thus, the signal paths are completely electronically switchable. Part count for this circuit is low. In terms of isolation performance, high values can be achieved because of the cascaded structure. For example, if each switching stage provides minimum 35 dB isolation in a relevant frequency range such as from 50 to 500 MHz, the total isolation performance will be a minimum of 70 dB.

Page 3, line 3, replace the paragraph beginning "According to a preferred embodiment of the invention" with the following:

According to a preferred embodiment of the invention, a control circuit is provided for the first switches. The control circuit preferably comprises at least two driver circuits, one to provide a control signal and to drive one of the first switches therewith, and the other to provide an inverted control signal and drive another of the first switches therewith. This allows control of both switches with only one control signal, provided at a control terminal. It is preferred for the control circuit to be comprised of discrete electronic parts.

Page 4, line 14, replace the paragraph beginning "Receiver module 15 comprises" with the following:

Receiver module 15 comprises a tuner 12. The tuner first translates an RF signal received at its input into an Intermediate Frequency (IF) signal. Further circuitry (not shown) then demodulates the IF signal to output an analogue video signal (Composite Video Baseband Signal) and a TV audio signal. The same tuner 12 may also contain additional circuits such as IF amplifiers, SAW filters, VSB/QAM demodulator, etc., which is capable of demodulating both terrestrial and cable Digital TV signal and outputting an MPEG-2 Transport Stream.

Page 4, line 21, replace the paragraph beginning "In the arrangement of Fig. 1" with the following:

In the arrangement of FIG. 1 there are two high frequency TV signal sources: a terrestrial TV antenna 16 and a TV cable network 18. The antenna 16 is connected to a first input port 20 of receiver set 11. The TV cable network 18 is connected to a second input port 22 of receiver set 11. In Set-Top-Box 21 of receiver set 11 the receiver module 15 is arranged in a way such that HF inputs 20, 22 of receiver set 11, are indeed input ports of receiver module 15. Receiver module 15 comprises a switch circuit 10 connected to input ports 20, 22. An output port 24 of switch circuit 10 is connected to the input of tuner 12. Switch 10 serves to connect either the signal from antenna 16 or the signal from cable network 18 to the tuner 12. Switch circuit 10 can be electronically controlled by tuner 12 via a control interface port 26.

Page 6, line 8, replace the paragraph beginning "If RFSW is Hi" with the following:

If RFSW is Hi, this corresponds to a first state where first SPST 28 is on, connecting first input port 20 to first branch port 48 of SPDT switch 32. At the same time, SPDT switch 32 is controlled by signal PESW set to Hi to connect first branch port 48 to common port 52, such that a signal path is provided between first input terminal 20 and output terminal 24 of switch 10. This signal path has low insertion loss. At the same time, second SPST switch 30 is off and also second branch port 50 of SPDT switch 32 is unconnected. Thus, there is high isolation between input terminal 20, 22 and between second input terminal 22 and output terminal 24.

Page 6, line 23, replace the paragraph beginning "In Fig. 3" with the following:

In FIG. 3, there is shown a circuit diagram of SPST switch 28. Both SPST switches 28, 30 are of identical structure. They are implemented using discrete electronic parts. PIN diodes D1, D2 serve as switching elements. For example, the PIN diodes of the types HVC142 family available from Hitachi or parts with similar PIN diode characteristics, such as low switched-on capacitance, can be used. The diodes D1, D2 are connected in anti-parallel fashion in series connection between input port 44 and output port 46. At each port 44, 46, there is provided a voltage divider between supply voltage (5 V) and ground, establishing a fixed DC potential. Between the diode D1, D2, a driver terminal 56 is connected where voltage  $V_{sw}$  is applied. If  $V_{sw}$  is Hi (e.g. 5 V), both diodes D1, D2 become forward biased, so that a signal path with low insertion loss is provided between input port 44 and output port 46. If  $V_{sw}$  is Lo (e.g. 0 V), on the other hand, diodes D1, D2 are reversed biased, so that a high isolation of about 40 dB is

achieved between input port 44 and output port 46. In Fig. 3 (and in succeeding Figures 4 and 5), a positive supply voltage 5V\_SW is used.

Page 7, line 3, replace the paragraph beginning "In Fig. 4" with the following:

In FIG. 4, there is shown an implementation of SPDT switch 32 of FIG. 2. SPDT switch 32 is implemented using an integrated circuit RF SPDT switch 58. This is preferably a MOSFET switch. For example, a PE4230 available from Peregrine Semiconductor Corp., can be used. This integrated circuit features high RF isolation (38 dB at 1.0 GHz) and low insertion loss (0.44 dB at 1.0 GHz) and makes use of low voltage CMOS logic control.